



INNOVATION FUND

Driving clean innovative technologies towards the market

Coda Terminal

The Innovation Fund is 100% funded by the EU Emissions Trading System



All images © Carbfix

Project summary

The Coda Terminal will be the world's first carbon mineral storage terminal, providing a new, safe and scalable method of permanent CO₂ storage. Coda will establish the full carbon capture and storage (CCS) value chain, using sustainable propulsion to ship CO₂ to Iceland for injection into basaltic rocks and permanent storage as carbonate minerals. Coda is a novel, low-cost CCS solution and a crucial contribution to achieving the EU's long-term climate targets, planning to achieve 91% relative greenhouse gas (GHG) emission avoidance over the first ten years of operation.

COORDINATOR

Carbfix

BENEFICIARY

Dan-UnityCO₂ A/S

LOCATION

Straumsvik, Hafnarfjörður, Iceland

SECTOR

CO₂ Transport and Storage

GHG EMISSION AVOIDANCE

21.1 Mt CO₂ eq

AMOUNT OF INNOVATION FUND GRANT

EUR 115 000 000

RELEVANT COSTS

EUR 336 768 000

ESTIMATED CAPEX

EUR 400 157 000

TOTAL PROJECT COSTS

EUR 601 000 000

STARTING DATE

1 January 2023

PLANNED DATE OF ENTRY INTO OPERATION

1 April 2026

The world's first CO₂ mineral storage terminal

The Coda Terminal will substantially alter the costs associated with CO₂ transport and storage, by building a highly scalable onshore carbon mineral storage terminal. While CCS projects have traditionally overlooked basaltic formations, these rocks have been proven as reliable reservoirs for permanent CO₂ storage. With an estimated storage cost of 13 €/tCO₂, Coda will drastically reduce the cost of CO₂ storage.

Coda relies on the Carbfix technology, in which captured CO₂ is dissolved in water and injected into basalts. Robust monitoring and verification methods will be used to validate the rapid mineralisation of CO₂. Dan-Unity CO₂ (a specific shipping entity) will manage maritime transportation to the Coda Terminal. Innovative solutions in low-pressure tank design and ship propulsion will be used to minimise the carbon footprint of CO₂ transport.

The port and storage site will be located in Straumsvík, SW Iceland, where there are geologically young basaltic rock formations and ample supply of renewable energy and water. Coda will geologically store, and thereby avoid, 21 Mt of CO₂ equivalent emissions over the first ten years of operation. This annually equates to over half of Iceland's yearly emissions and approximately 2.5% of reductions required across the EU by 2030.

Key policy contributions

For the EU to meet its 2050 climate neutrality ambition, large-scale deployment of CCS is

needed. The Coda Terminal offers a scalable, cross-border CO₂ transport and onshore mineral storage solution that mainly requires water and favourable rock formations for operations. Coda will offer the most cost-efficient European CO₂ transport and storage service on the market. The project will also directly contribute to policy targets in energy efficiency, circular economy, and renewable electricity.

Scaling up a new climate-friendly industry

The Coda Terminal provides the foundation for a new climate-friendly industry. During the project's lifetime, Coda will create between 130 and 260 local jobs on site, and 85 (crew) and 5 (ashore) for transportation. In addition, indirectly 400 (shipyard) jobs will be created.

Coda has an exceptional scale-up potential. Local opportunities include expansion of the terminal, replication sites and coupling with local sectors, such as geothermal, heavy industry, waste management and direct air capture. In this respect, it should be noted that the project, during its lifetime, will use a mere 3% of the estimated capacity of the site to mineralise CO₂, which highlights the technology's scalability.

Globally, mineral storage terminals can be built in strategic locations favourable for mineral storage, receiving CO₂ regardless of sector or origin. Planned capture projects in Europe far outnumber storage sites currently in development, meaning demand for reliable storage is high.